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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,942	02/25/2002	Tae-Kwang Park	2007	5012

7590

02/19/2004

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EXAMINER

TRAN, HENRY N

ART UNIT

PAPER NUMBER

2674

2

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,942

Applicant(s)

PARK ET AL.

Examiner

HENRY N TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Application has been examined. The original claims 1-32 are pending. The examination results are as following.

Claim Objections

1. Claims 14 and 29 are objected to because of the following informalities: errors have been found: in line 5 of claim 14, the claimed term "data items be displayed" should be changed to -- data items to be displayed --; and in line 8 of claim 29, the claimed term "data items be displayed" should be changed to -- data items to be displayed --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4-6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 4-6 recite the limitation "said mismatches" in line 3 of claim 4. There is insufficient antecedent basis for this limitation in the claims.

5. Claim 8 recites the limitation "k" in line 1 of claim 8. There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1, 7, 9, 11, 14-17, 21 and 29-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurumisawa et al (U.S. Patent No. 6,252,572, hereinafter "Kurumisawa").

Kurumisawa teaches an apparatus and multi-line drive methods for driving an STN LCD comprising: an LCD panel 2250 consisting of n scanning lines, X, and m column lines, Y, arranged in rows and columns, respectively; a row driver 2200 for participating the n scanning lines into a plurality of scanning blocks of m = 2, 3, 4, ... scanning lines, which are simultaneously selected for driving; a column driver 2100, which acts as a column signal circuit for calculating column signals that generates the same display by selecting multiple rows, for driving column lines; a data memory, RAM 252, having rows and columns of cells, C, for storing display data and for concurrently outputting m number of data items to be displayed in a

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selected block of scan lines, which are adjacent rows, and along the same column, which is a selected column line on the LCD panel; wherein, the m number of data items to be displayed are arranged inside the data memory along the same column; see figures 1, 2, 8, 18, 53 and 57; col. 5, lines 49-52; col. 6, lines 57-64; col. 7, lines 3-9; col. 8, lines 16-21; col. 12, lines 9-47; col. 13, lines 1-10.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 3, 10, 12, 13, 18-20, 22-28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurumisawa in view of Furuhashi et al (U.S. Patent No. 5,818,409, hereinafter "Furuhashi").

Kurumisawa teaches generally all as noted above. Kurumisawa further discloses the use of an XOR block 262 for performing exclusive OR operations between the m number of data items and the orthogonal function data to determine mismatches, see figures 26, col. 7, lines 3-9. However, Kurumisawa does not teach expressly the m number of data items arranged along the same row inside the data memory; the memory for storing data or RGB data for displaying back and white gray scale, or colors; the column signal circuit comprising a voltage selector block having multiple voltage selectors, a level shifter block having multiple level shifters, a decoder block having multiple decoders. Furuhashi teaches an apparatus and multi-line drive methods

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for driving an STN LCD panel, comprising a column electrode driver 106 having a voltage selector block having voltage selectors 25, a level shifter 241 having multiple level shifters, a decoder block 163 having multiple decoders 163-1, ...163-30, and a memory 252 having memory cells arranged in matrix of rows and columns for storing data items to be selected for displaying see figures 2, 10, 36 and 44. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Furuhashi and of Kurumisawa because this would simplify the driver circuit for providing high speed multiple line selection drive by reducing the number of voltage levels that are applied to the column electrodes; and this allows a display device with excellent display performance to be obtained. Claims 2, 3, 10, 12, 13, 18-20, 22-28 and 32 are dependent upon base claims 1, 14 and 29, and are rejected on the same reasons set forth in claims 1, 14 and 29, and by the reasons discussed above.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are U.S. Patent Nos. 5900856 and 6483497, which teach apparatus and methods for driving LCD.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY N. TRAN whose telephone number is 703-308-8410.

The examiner can normally be reached on Mon – Fri from 8:00AM – 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD A. HJERPE, can be reached at 703-305-4709.

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Any response to this action should be mailed to:

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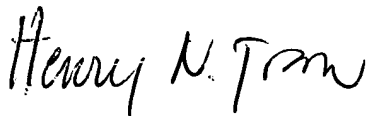
Washington, D.C. 20231

or fax to:

703-872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose telephone
number is 703-306-0377.



HENRY N. TRAN
Examiner
Art Unit 2674

Hnt
February 13, 2004